



Lichfield Science & Engineering Society

LICHFIELD GARRICK
Theatre & Studio

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8:00 pm on Wednesday 9th October 2013
in the Studio Theatre of the Lichfield Garrick, Castle Dyke, Lichfield

FROM PLANTS TO PETROL – A biologist looks at biofuels

Professor John Bryant
Professor Emeritus of Cell and Molecular Biology
University of Exeter

John Bryant is a former Head of Biosciences at the University of Exeter, a Past-President of the Society for Experimental Biology and former Chair of Christians in Science. He was a Visiting Research Associate at the Brookhaven National Laboratory, USA from 1992-1997 and Visiting Professor of Molecular Biology at West Virginia State University, USA from 1999-2007. In his research he has focussed on DNA, genes and gene expression and especially on the control of DNA replication. Since 1995 he has also worked on the development of teaching Bioethics to Bioscience students, across the UK (as an adviser to the Higher Education Academy) and overseas. His recent books include *Bioethics for Scientists*, *Introduction to Bioethics and The Eukaryotic Cell Cycle*. His *Functional Biology of Plants* (with Martin Hodson) was selected in the USA as *Outstanding Academic Title, 2012*). Twice short-listed for a national award in science communication he is well-known as a speaker, writer and broadcaster on science, bioethics and science & religion. He has recently been honoured by the Society for Experimental Biology for his work on plant DNA replication and cell division.

Outside of work, John loves sport. He is a cross-country and road runner (formerly at county level) and played evening league cricket for many seasons. He is a devoted fan of Crystal Palace FC. John is also a keen birdwatcher and loves wild places – mountains, moors, marshes, deserts. He is an active member of Exeter Network Church.

There are at least two drivers of our search for alternative fuels. One is climate change which, nearly every professional scientist agrees, is being caused by our release to the atmosphere of CO₂, previously locked up in fossil fuels. The second is the possibility (according to some, the certainty) that stocks of combustible fuels will not keep up with demand, even if shale gas is eventually exploited.

It is no surprise then that there is a push to develop alternative fuels. For electricity, generation from environmental energy sources such as sun, wind, waves, tides and geothermal sources is clearly feasible and is being developed all around the world. However, combustible fuels are more of a problem and one of the approaches to solving that problem is to utilise the biochemical or chemical conversion of biological material into fuel – hence the term biofuel.

The talk will cover older biofuel technologies such as biogas and alcohol from sugar as well as more recent methods of making biofuels from waste plant materials and from 'biofuel farming', and will review the active research projects on biofuels from algae and bacteria. Particular attention will be given to the ethical and societal aspects of biofuel production.

For further information, please see our website at www.LSES.org.uk

Admission: Visitors £5.00, Students and Members free but please sign in.
Tickets are not issued in advance: visitors please pay at the auditorium door.
This lecture is expected to finish by 10.00 pm.